REMARKS/ARGUMENTS

Applicant responds herein to the Office Action dated June 28, 2006.

Claims 1-34 were previously canceled without prejudice or disclaimer. Therefore, claims 35-83 are the claims currently pending in the present application.

Claims 36, 40 and 77-83 are amended to clarify features recited thereby.

Applicant thanks the Examiner for acknowledging the claim for foreign priority, and for acknowledging the receipt of the priority documents in the parent application.

Further, applicant thanks the Examiner for acknowledging review and consideration of the references cited in the Information Disclosure Statement filed on January 28, 2004.

Objection to the Specification

The Examiner objects to the Specification on the ground that the first paragraph allegedly fails to include a paragraph updating the recital of related applications.

The Examiner's attention is respectfully directed to the Preliminary Amendment filed January 28, 2004, which includes an amendment to the Specification with such a paragraph. Therefore this objection should now be withdrawn.

Claim Objection

Claim 45 is objected to because of a minor typographical error.

This error is now removed, and therefore this objection should now be withdrawn.

Rejection of Claims 77 and 79-83 under 35 U.S.C. § 102

Claims 77 and 79-83 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sano et al., U.S. Patent No. 6,099,466. Reconsideration of this rejection is respectfully requested.

Among the problems recognized and solved by applicant's claimed invention is that in an endoscope system the intensity of the flourescent image provided to the image processor may vary for various reasons unrelated to the amount of fluorescence light currently being provided by the light source. (See for example, applicant's disclosure, page 46.) According to an aspect of the present invention, the amplification of the fluorescence image is controlled based on light in the visible spectrum received by the imaging device.

For at least the following reasons, applicant's claimed invention is neither anticipated by nor obvious from the cited reference. By way of example, independent claims 77 and 79-83 require controlling the amplification factor for controlling an image brightness of a fluorescence image in the solid-state imaging device based on visible light received by the imaging device.

Sano discloses a fluorescence diagnosis endoscope system with a pair of image receiving elements and a filter in front of the image receiving element that transmits only light produced by the fluoresced human tissue (Sano, Abstract), such that the sensitivity of the image intensifier 31 is changed to adjust the brightness of the image (Sano, column 10, lines 21-31).

Sano does not disclose or suggest controlling the amplification factor in the solid-state imaging device based on visible light received by the imaging device, as *inter alia*, required by independent claims 77 and 79-83. That is, Sano does not disclose or suggest that visible light received by a controller from the body being examined is monitored and used to adjust or control the amplification factor of the fluorescence image. Accordingly, Sano does not disclose or suggest applicant's invention as claimed in independent claims 77 and 79-83.

Further, Sano does not disclose or suggest the problems recognized and solved by applicant's disclosure. For example, the problem of the brightness of a fluorescence image being affected by several factors other than current excitation light being provided, is not disclosed or suggested. Accordingly, Sano does not even disclose or suggest the problems recognized by applicant's disclosure, let alone provide the solutions provided by applicant's invention as claimed in independent claims 77 and 79-83. Therefore, this rejection is traversed and should now be withdrawn.

Rejection of Claims 77 and 82 under 35 U.S.C. § 103

Claims 77 and 82 are rejected under 35 U.S.C. § 103 as being obvious from Palcic, U.S. Patent No. 5,827,190. Reconsideration of this rejection is respectfully requested.

Independent claims 77 and 82 require controlling the amplification factor for controlling an image brightness of a fluorescence image in the solid-state imaging device based on visible light received by the imaging device.

Palcic discloses an endoscope with an integrated CCD sensor in which light source 8 illuminates blue (visible) light for longer than red (visible) light to collect sufficient fluorescence from the object examined (Palcic, column 10, lines 12-27).

Palcic does not disclose or suggest controlling the amplification factor for the fluorescence image in the solid-state imaging device based on visible light received by the imaging device. That is, Palcic does not disclose or suggest that according to visible light that is received by the imaging device, the amplification factor in the solid-state imaging device is adjusted or controlled, as *inter alia* required by independent claim 77 and 82.

Further, Palcic does not address the above-cited problems recognized and solved by applicant's claimed invention. Therefore, Palcic does not even remotely disclose or suggest applicant's invention as claimed in independent claims 77 and 82. Accordingly, this rejection is traversed and should be now be withdrawn.

Rejection of Claims 36-38 and 78 under 35 U.S.C. § 103

Claims 36-38 and 78 are rejected under 35 U.S.C. § 103 as being obvious from Palcic in view of Kaneko et al., U.S. Patent No. 5,749,830. Reconsideration of this rejection is respectfully requested.

Independent claim 78 requires controlling the amplification factor in the solid-state imaging device for controlling image brightness of a fluorescence image based on visible light received by the imaging device.

As discussed, Palcic does not disclose or suggest the above-cited features.

Kaneko discloses a fluorescent endoscope apparatus that captures both visible and fluorescence light images (Kaneko, Abstract), such that the image signal that has been converted by the solid-state image sensing device 74 is supplied to an amplifier 150 so that the signal to noise (S/N) ratio is improved and the signal level is amplified. In particular, the fluorescent image is subjected to a difference calculating process in a difference circuit 154, such that the differences between light images and dark images are processed (Kaneko, column 18, lines 20-32).

Kaneko does not cure the above-cited deficiencies of Palcic as they relate to independent claim 78. As discussed, Kaneko provides an amplifier for the signal level and a difference circuit 154 to improve the signal to noise ratio of the fluorescent image signal. However, Kaneko does not address controlling image brightness based on an amplification factor controlled according to light received. Thus, Kaneko does not disclose or suggest a variable amplification factor for controlling an image brightness based on the light received by the imaging device, as *inter alia*, required by independent claim 78.

Therefore, Palcic and Kaneko, even taken together in combination, do not disclose or suggest applicant's invention as claimed in independent claim 78.

Independent claim 36 provides that the solid-state imaging device is at the distal end of the insertion part of the endoscope and that it provides an amplification function that serves to amplify a signal subjected to photoelectric conversion inside the solid-state imaging device.

This aspect of the invention makes it unnecessary to provide an image intensifier or the like, as the amplification means outside of the solid-state imaging device. If an image intensifier is used, an electric charge amplifier, which is called MCP (Micro Channel Plate), is needed outside of the solid-state imaging device, thereby making it difficult to reduce the size of the distal end.

But with the device of claim 36, it is possible to reduce the size of the distal end, because such amplification function is provided in the solid-state imaging device.

Furthermore, in the device of claim 36, since the signal amplification is effected in the solid-state imaging device, it is possible to increase the signal to noise ratio in comparison with the case where the amplification is provided outside of the solid-state imaging device.

Claims 37 and 38 depend from independent claim 36 and thus incorporate novel and unobvious features thereof. Claim 37 and 38 are patentably distinguishable over the cited art for at least the reasons that independent claim 36 is patentably distinguishable over the prior art. Therefore, this rejection is traversed and should now be withdrawn.

Rejection of Claims 40-45 under 35 U.S.C. § 103

Claims 40-45 are rejected under 35 U.S.C. § 103 as being obvious from Sano. Claim 40 requires a variable amplification factor for controlling an image brightness control based on light received by the imaging device. Reconsideration of this rejection is respectfully requested.

Sano does not disclose or suggest the above-cited features of independent claim 40, as discussed *supra*.

Claims 41-45 depend from independent claim 40 and thus incorporate novel and nonobvious features thereof. Accordingly, claims 41-45 are patentably distinguishable over the cited art for at least the reasons that independent claim 41 is patentably distinguishable over the cited art. Therefore, this rejection is traversed and should now be withdrawn.

Rejection of Claims 36-38 and 77-83 under 35 U.S.C. § 103

Claims 36-38 and 77-83 are rejected under 35 U.S.C. § 103 as being obvious from Kaneko in view of Hynecek, U.S. Patent No. 5,337,340. Reconsideration of this rejection is respectfully requested.

Independent claims 36 and 77-83 require a variable amplification factor for controlling an image brightness of a fluorescence image based on visible light received by the imaging device. As discussed, Kaneko does not disclose or suggest such features. Further, Hynecek does not cure the above-cited deficiencies of Kaneko as they relate to such features. Therefore, Kaneko and Hynecek, even taken together in combination, do not disclose or suggest applicant's invention as claimed in independent claims 36 and 77-83.

Claims 37 and 38 depend from independent claim 36 and thus incorporates novel and unobvious features thereof. Accordingly, claims 37 and 38 are patentably distinguishable over the cited art for at least the reasons that independent claim 36 is patentably distinguishable over the cited art. Therefore, this rejection is traversed and should now be withdrawn.

In view of the foregoing discussion, reconsideration of the rejections is respectfully requested and allowance of the claims of the application is now believed to be warranted. Should the Examiner have any questions regarding the present Amendment or regarding the

application generally, the Examiner is invited to telephone the undersigned attorney at the below-provided telephone number.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

Respectfully submitted,

THIS CORRESPONDENCE IS BEING SUBMITTED ELECTRONICALLY THROUGH THE UNITED STATES PATENT AND TRADEMARK OFFICE EFS FILING SYSTEM ON SEPTEMBER 27, 2006

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